

**FACT SHEET  
FOR STATE WASTE DISCHARGE  
PERMIT NO. ST-9216**

**YAKIMA CHIEF, INC.**

**SUMMARY**

Yakima Chief, Inc. is seeking reissuance of a State Waste Discharge Permit for its hop extract facility in Sunnyside, Washington. Yakima Chief is a privately-held, locally-owned company, established in 1989, that also operates a nearby hop pellet plant. The extract plant utilizes a supercritical carbon dioxide (CO<sub>2</sub>) process to produce approximately 1,000 tons of hop extract annually.

Yakima Chief, Inc. discharges Extract processing water, Cleanup water, Separator water and Boiler water to the Port of Sunnyside Industrial Wastewater Treatment Facility (IWWTF). Conditions of this permit regulating the volume and organic loading characteristics of these discharges are based on the company's contract with the IWWTF.

A fifth process wastewater stream consisting of chiller blowdown water and condenser bearing seal flush water, storm water and a soon to be installed one pass non-contact cooling water are discharged to an onsite percolation/evaporation pond as capacity and weather allows. The Permittee plans to use this water for irrigation and dust abatement. A primary requirement of this permit is that the company must demonstrate to the Department of Ecology that discharges from the pond to ground water are in compliance with the State's Ground Water Quality Standards. To this end, monitoring of TDS and pH will be required in the proposed permit. A pH limit range of 6.5 to 8.5 and a TDS limit of 500 mg/L is proposed.

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## **INTRODUCTION**

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST-9216. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to Port of Sunnyside, IWWTF. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.160) requires that a permit be issued before discharge of wastewater to waters of the State is allowed. This statute includes commercial or industrial discharges to sewerage systems operated by municipalities or public entities which discharge into public waters of the State. Regulations adopted by the State include procedures for issuing permits and establish requirements which are to be included in the permit (Chapter 173-216 WAC).

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix C -- Response to Comments.

GENERAL INFORMATION		
Applicant	Yakima Chief, Inc.	
Facility Address	555 W. South Hill Road Sunnyside, WA 98944	
Type of Facility:	Production of hops extracts	
Treatment Plant Receiving Discharge	Port of Sunnyside IWWTF	Percolation Pond & Landscape Irrigation Storage
Facility Discharge Location	Latitude: 46° 18' 26" N Longitude: 120° 01' 52" W.	Parcel Number 221035-42017 SE1/4 of the SW1/4 of Sec. 35, T 10N, R 22E W.M.
Contact at Facility	Name: Karl Vanevenhoven Telephone #: 509-839-9022	
Responsible Official	Name: Brendan O'Connell Title: Chief Operations Officer Address: Same as above Telephone #: Same as above	

## BACKGROUND INFORMATION

### DESCRIPTION OF THE FACILITY

The facility is located on a 7 acre site, in the southwest portion of Sunnyside, Washington and northwest of the Port of Sunnyside. The site is bordered on the north by South Hill Road, on the south by I-82, and on the east and west by pasture lands. The existing plant occupies the eastern half of the site; the western half is presently pasture, but the company plans to utilize the land for future expansion.

Raw hops are bought from farmers throughout the Yakima Valley, processed into pellets at the company's nearby pellet plant, and then brought to the extract plant for further processing. Between 3,500 and 5,000 tons of hop pellets are processed into 1,000 tons of extract annually. The facility employs up to 40 people and typically operates 7 days a week, 50 weeks per year.

### PRODUCTION PROCESS

The production process utilizes a supercritical CO<sub>2</sub> method to extract resins and essential oils from pelletized hops. The term "supercritical" refers to the high-pressure and temperature at which the process runs. The process begins by loading the extractor with hop pellets. The extractor is then purged with CO<sub>2</sub> to rid the extractor of air. After the purge cycle is completed, pressurization of the extraction vessel begins, followed by introducing high-pressure liquid CO<sub>2</sub>.

The extractor is then brought online and supercritical CO<sub>2</sub> is introduced into the vessel at a pressure of up to 5,000 pounds per square inch (psi).

Once the extractor is online the process of separating the resins and essential oils from the hops begins. The soluble extracts flow with the CO<sub>2</sub> through a set of online filters, a heat exchanger, and a back-pressure control valve into the high-pressure separator. The extractor contains a second set of filters to prevent plant fiber from traveling with the CO<sub>2</sub>. In the separator the CO<sub>2</sub> is vaporized. The extract remains in liquid form and is transferred to the low-pressure separator to remove residual CO<sub>2</sub>. The extract is then transferred to product tanks. CO<sub>2</sub> is recovered by means of compression and condensation and recirculated into the extractors.

Once a product tank is full, the contents are analyzed and packaged. Separate blend tanks are used to mix extract with corn syrup to produce a finished product which meets specific customer needs. The Permittee plans to plumb the water jackets to city water on the product storage tanks to control viscosity of the product during packaging.

## WASTEWATER STREAMS

Process water is supplied by the City's municipal water system. The consumption of water per day is estimated at approximately 12,000 gpd. The wastewater streams, the type of each discharge, their respective reported flow volumes, and engineered maximum flows are:

Process	Type of Discharge	Reported Flow gpd	Maximum Design Flow gpd
<b>Discharges to the IWWTF</b>			
Hops extract boiler water	Batch	1,221	7,200
Hops extract separator water	Batch	425	600
Cleanup water	Batch	500	10,080
Hops extract processing water	Batch	200	N/A
<b>Discharges to the pond during warmer months</b>			
Chiller water	Batch	1995	2,592
Seal Flush water	Continuous	6,048	14,400
Packing Line water jacket	Batch	1350 <sup>a</sup>	N/A

<sup>a</sup> Permittee estimates discharges from the packing line will occur at a maximum of 8 times a month. Total monthly discharge will be 10,800 gallons.

The Permittee is proposing to add an additional stream consisting of one pass non-contact cooling water sometime during the proposed permit cycle. The new water-jackets will supply cooling to the packing line in order to control the viscosity of the product during packing. This stream consists of City water at a pH above 8. This additional discharge estimated at 10,800 gallons per month may mitigate pH values observed in the chiller and seal flush waters that are sometimes below the ground water quality standard. The Permittee intends to discharge combined Chiller, Seal Flush and Packing Line water-jacket water to the percolation/evaporation

pond during the course of the year. However, The Permittee does have the capability to divert its flow of non-contact cooling water to the IWWTF.

The permit application contained information regarding the anticipated chemical characteristics of each wastestream flow, but these data are not included in this fact sheet. The data were omitted because discrete chemical analysis of each wastewater stream would not adequately reflect characteristics of the typical combined discharge to the IWWTF. Furthermore, modeling of a typical discharge is difficult because some wastewater streams are discharged continuously and others intermittently. Data describing chiller water is included because this wastewater stream is discharged into the percolation/evaporation pond during warm weather.

A brief description of each wastewater stream follows:

### **DISCHARGES TO THE PORT OF SUNNYSIDE IWWTF**

Flows to the IWWTF are monitored by the Port of Sunnyside at the Port maintained weir.

#### **Boiler water**

The boiler generates steam and hot water used in various steps of the extraction process. This effluent stream results from boiler blowdown, which is done to prevent buildup of scale in the boiler piping. Blowdown occurs automatically whenever an inline conductivity meter senses suspended solids above a certain level. Maximum flow reported is 7,200 gpd that occurred when a valve failed in the open position. Actual average operations flow is reported at 1,221 gpd.

#### **Separator water**

Hop extract is separated into two products: alpha acid and beta acid with hop oil. The separation occurs by adding pH adjusted water and agitation. Once the useable components are recovered the wastewater is neutralized and discharged at an average flow of 425 gpd. The design allows for flows up to 600 gpd. Weigh cells are used to determine the flow.

#### **Cleanup water**

This effluent stream consists of plant wash down water. The maximum design flow is 10,080 gpd. The actual operation flows reported are on average at 500 gpd.

#### **Extract processing water**

Some of the moisture contained in raw hops accumulates in the CO<sub>2</sub> recovery tank during the production process. Periodically the contents of this tank are discharged, which is discharged to the Port of Sunnyside. The estimated discharge is calculated at approximately 200 gallons. This flow is dependant in part on the moisture content of the raw hops, which is variable.

## **DISCHARGES TO THE PERCOLATION/EVAPORATION POND AND LANDSCAPE IRRIGATION**

The pond dimensions are 100 ft by 75 ft with a depth of 4 ft. The 30,000 cubic feet of pond volume is capable of holding 0.224 million gallons. The water in the pond infiltrates to ground, evaporates and is used in landscape watering on the facility's grounds. The Permittee is proposing to use water stored in the Percolation/Evaporative Pond to irrigate approximately 1.1 acres of lawn and 0.2 acres of trees via a water drip line. The Permittee has also purchased an adjacent 7 acre field that they may irrigate at a later date. The pond water is required to be monitored for pH and TDS in the proposed permit. The amount of water used for irrigation will be required to be monitored in the proposed permit to assure irrigation BMPs.

Flows to the pond are metered. Including the proposed water-jacket line, they consist of the following:

### **Seal Flush Water**

Seal flush water cools the water jacketed bearings associated with the CO<sub>2</sub> pumps, which is discharged to the Port of Sunnyside or seasonally to the percolation pond. The maximum design flow is 14,400 gpd. The actual reported flow is 6,048 gpd, which is discharged to the percolation pond.

### **Chiller Water**

The chiller unit is used to recover CO<sub>2</sub> through condensation of CO<sub>2</sub> vapor. As with the boiler water, this effluent results from blowdown of the condenser. Characterization of the metered chiller water discharge has been conducted and no toxics were detected.

The permit application contains the following treatment chemical dosages: 5 mg/L phosphonate and 6 mg/L SRI-5. SRI-5 is a CH<sub>2</sub>O biocide which contains 5% by weight 2, 2-dibromo-3-nitrilopropionamide. The maximum flow is 2,592 gpd at a pH of 8.5 and the actual reported flow is 1995 gpd, which is discharged to the percolation pond.

### **Packing Line Water Jacket**

The Permittee is proposing to cool the hop extract bulk packaging vessels with once pass through non-contact cooling water fed with city water. This system is being installed in order to better control the viscosity of the product for packaging prior to shipping. Yakima Chief estimates 10,800 gallons per month will be discharged to either the Port of Sunnyside or to the percolation pond in season. The discharge will be metered. The packing line cooling needs are estimated at approximately 8 days per month. The City water at a pH between 8 and 8.5 may help mitigate



the lower pH values found in the seal flush and chiller waters and bring the combined discharge into the groundwater criterion of pH range 6.5-8.5.

## PERMIT STATUS

The existing permit for this facility was issued on November 24, 1999.

An application for permit renewal was received by the Department on September 20, 2004 and accepted by the Department on September 23, 2004.

## SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on September 22, 2004.

During the history of the previous permit, the Permittee has remained in compliance based on Discharge Monitoring Reports (DMRs) and other reports submitted to the Department and inspections conducted by the Department.

## WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the DMRs. The proposed wastewater discharge is characterized for the following parameters:

### Characterization of Combined Wastewater Flow to Port of Sunnyside

Parameter	2002-2004 Characterization		
	Average	Highest Monthly Average	Lowest Monthly Average
Flow, gallons per month	17,468	69,040	3,440
TDS, lbs. per month	19,676	125,772	63
FDS, lbs. per month	19,186	123,596	52
COD, lbs. per month	2504	10942	59
TSS, lbs. per month	233	1446	3
pH Maximum	8.99	12.6	5.47
pH Minimum	6.6	9	2.8

The Permittee is required to monitor TDS and FDS twice a month. The above characterization includes one potential outlier for both TDS and FDS that occurred in the latter half of July 2003.

The Department believes the apparent outliers inflated the averages. Removing the suspected outliers the next highest monthly averages are 79,739 lbs. TDS per month and 78,832 lbs. FDS per month. The cumulative averages for the 2002-2004 timeframe become 15,062 lbs. per month and 14,647 lbs. per month respectively. COD and TSS also experienced higher than normal averages during July and September of 2003.

**Characterization of Combined Wastewater Flow to Percolation/Evaporation Pond**

Parameter	2002-2004 Characterization			Permit Limits	
	Average	Highest Monthly Average	Lowest Monthly Average	Daily Minimum	Daily Maximum
Flow, gallons per day	2006	3704	59	Not to overflow the capacity of the pond.	
pH, Std Units	5.9	8.5	5.4	6	9

**PERMIT LIMITATIONS**

**EFFLUENT LIMITATIONS BASED ON USER CONTRACT**

In order to protect the Port of Sunnyside IWWTF from pass-through, interference, concentrations of toxic chemicals that would impair beneficial or designated uses of sludge, or potentially hazardous exposure levels, limitations for certain parameters are necessary. The Permittee's loading allocations were apportioned from the total assessed treatment capacity of the IWWTF.

Effluent limitations contained in this permit are based on hydraulic and organic loading allocations detailed in the User Contract between the Port of Sunnyside and the Permittee. Schedule A of the User Contract contains the Permittee's monthly hydraulic and organic loading allocations.

**EXPIRATION DATE: MARCH 31, 2010**

Schedule A from the most recent contract, dated June 28, 2000, is presented in the table below:

MONTH	HYDRAULIC DISCHARGE Monthly total, in cubic feet		TSS Monthly total, in pounds	COD Monthly total, in pounds
	Contract <sup>1</sup> (gallons)	Peak <sup>2</sup> (gallons)		
January	90,000 (673,200)	*	500	5,000
February	75,000 (561,000)	*	500	5000
March	50,000 (374,000)	75,000 (561,000)	500	5000
April	50,000 (374,000)	75,000 (561,000)	500	5000
May	50,000 (374,000)	75,000 (561,000)	500	5000
June	50,000 (374,000)	75,000 (561,000)	500	5000
July	50,000 (374,000)	75,000 (561,000)	500	5000
August	50,000 (374,000)	75,000 (561,000)	500	5000
September	50,000 (374,000)	75,000 (561,000)	500	5000
October	50,000 (374,000)	75,000 (561,000)	500	5000
November	75,000 (561,000)	*	500	5000
December	90,000 (673,200)	*	500	5000
Annual Total	730,000 (5,460,400)	276,500 (2,068,220)	6,000	60,000

1. The minimum discharge volume the Port is committed to accept from the Permittee.
2. The industry may exceed the monthly contracted volumes up to these volumes, *provided*, the total discharge for the four consecutive months of November through February (\*) is not in excess of 330,000 cubic feet, and the IWWTF has treatment capacity for the additional volumes.

Schedule A is included in this fact sheet to illustrate the structure of the loading allocations under which the Permittee operates. Schedule A is not incorporated directly into the permit document because contract conditions are occasionally modified as the Port finds it necessary. However, inclusion of Schedule A into Appendix A of the Operation and Maintenance (O & M) Manual is required by Special Condition S4.A3. of this permit, thus making the conditions an enforceable part of the permit.

## GROUND WATER QUALITY LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters, including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. Drinking water is the beneficial use generally requiring the highest quality of ground water. Providing protection to the level of drinking water standards is considered sufficient to protect existing and future beneficial uses.

The intent of the standards is not to allow degradation of ground water up to the standards, but rather to protect background water quality to the extent practical. The antidegradation policy mandates the protection of background water quality and prevents degradation of water quality which would harm a beneficial use or violate the Ground Water Quality Standards.

Applicable ground water criteria as defined in chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

**Ground Water Quality Criteria**

Total Coliform Bacteria	1 Colony/ 100 mL
Total Dissolved Solids	500 mg/L
Chloride	250 mg/L
Sulfate	250 mg/L
Nitrate	10 mg/L
pH	6.5 to 8.5 standard units
Manganese	0.05 mg/L
Total Iron	0.3 mg/L
Toxics	No toxics in toxic amounts

The Permittee has proposed to irrigate their landscaping with the non-contact cooling water discharged to and stored in the percolation/evaporation pond. Analysis of the wastewater has demonstrated that at this time irrigation with the non-contact cooling water would not negatively impact groundwater quality. Recent analysis found a TDS level of 300 mg/L and the pH to be within the criterion range of 6.5-8.5. Therefore, the Department will allow the Permittee to irrigate with this discharge subject to development of an approved Sampling and Analysis Plan to assure groundwater quality is not compromised. The Department reserves the right to order irrigation with this discharge be suspended should analysis determine the quality of the water has the potential to negatively impact groundwater quality or should the Permittee exceed agronomic rates of application.

**SAMPLING AND ANALYSIS PLAN**

To assure that groundwater quality is not negatively impacted, the Permittee will be required to develop a Sampling and Analysis Plan, SAP, Special Condition, S9, for discharges to the percolation /evaporation pond and submit the SAP for approval no later than **April 30, 2005**. Until such time as the approved SAP is incorporated into the O & M Manual, Appendix B, the interim monitoring requirements contained in Special Condition S2 of the proposed permit constitute the enforceable monitoring requirements of the permit. Upon approval, the SAP will be incorporated into Appendix B of the O & M Manual. The SAP shall then constitute the enforceable monitoring requirements of the permit.

## **MONITORING REQUIREMENTS**

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, and that effluent limitations are being achieved (WAC 173-216-110). The monitoring schedule is detailed in this permit under Special Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

The Permittee will be required to monitor the combined flow consisting of extract processing water, cleanup water, separator water and boiler water that is discharged to the IWWTF for TSS, COD, pH, TDS and FDS.

## **OTHER PERMIT CONDITIONS**

### **REPORTING AND RECORDKEEPING**

The provisions of Special Condition S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110 and 40 CFR 403.12 (e),(g), and (h)).

### **OPERATIONS AND MAINTENANCE (O&M)**

The proposed permit contains Special Condition S5. as authorized under Chapter 173-240-150 WAC and Chapter 173-216-110 WAC. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

In addition to including information regarding the proper operation and regular maintenance of plant equipment, the Permittee's O&M Manual is required to include pretreatment procedures, best management practices (BMP's) for the percolation/evaporation pond and land application in Appendix A.

Pretreatment procedures that may be included are neutralization of wastewater and maintenance of any related devices, such as screens and filters. BMP's associated with the pond include preserving the proper freeboard and treatment of the earthen banks to inhibit growth of weeds. Appendix A, which details the hydraulic and organic load allocations governing the Permittee's discharge to the IWWTF, is required to be included in the manual as Appendix A. It is anticipated that the loading allocated by the IWWTF to the Permittee is likely to change during the 5 year permit cycle; by including the allocations as a part of the O&M Manual, the permit will not have to be reissued or modified. Furthermore, Special Condition S4.A requires that the

manual be kept updated, as necessary, so the Permittee is legally responsible for timely revision of the manual and notifying the Department of such changes.

The last updated O&M Manual was received by the Department in 2001. The Permittee is required to submit for Departmental approval an updated O&M Manual no later than **January 31, 2006**.

### **PROHIBITED DISCHARGES**

Certain pollutants are prohibited from being discharged to the IWWTF. These include substances which cause pass-through or interference, pollutants which may cause damage to the IWWTF or harm to the IWWTF workers (Chapter 173-216 WAC), and the discharge of designated dangerous wastes not authorized by this permit (Chapter 173-303 WAC).

All discharges to ground water, via the onsite percolation/evaporation pond, must also be in compliance with the State's ground water quality standards.

### **DILUTION PROHIBITED**

The Permittee is prohibited from diluting its effluent as a partial or complete substitute for adequate treatment to achieve compliance with permit limitations.

### **SOLID WASTE PLAN**

The Department has determined that the Permittee has a potential to cause pollution of the waters of the State from leachate of solid waste.

This permit requires, under authority of RCW 90.48.080 that the Permittee review annually and/or update its plan whenever substantial changes in the character of the solid waste or methods of handling said waste have been made and submit to the Department the updated Solid Waste Plan to prevent solid waste from causing pollution of waters of the State. The plan is required to meet the rule requirements of Chapter 173-350 WAC. This plan is required to be reviewed annually or updated as conditions change, whichever is more frequent.

### **SPILL AND SLUG DISCHARGE PREVENTION AND CONTROL PLAN**

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

In addition, the Department has determined that the Permittee has the potential for a batch discharge or a spill that could adversely affect the IWWTF; therefore, a slug discharge control plan is required (40 CFR 403.8 (f)).

The Permittee has developed a plan for preventing the accidental release of pollutants to State waters and/or the IWWTF for minimizing damages if such a discharge occurs. The proposed permit requires the Permittee to review this plan annually and/or update this plan if substantial changes have been made and submit it to the Department.

### **GENERAL CONDITIONS**

General Conditions are based directly on State laws and regulations and have been standardized for all industrial waste discharge to IWWTF permits issued by the Department.

Condition G1. requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2. requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3. specifies conditions for modifying, suspending or terminating the permit. Condition G4. requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5. requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6. prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Conditions G7. and G8. relate to permit renewal and transfer. Condition G9. requires the Permittee to control production or wastewater discharge in order to maintain compliance with the permit. Condition G10 prohibits the reintroduction of removed pollutants into the effluent stream for discharge. Condition G11. requires the payment of permit fees. Condition G12. describes the penalties for violating permit conditions.

### **PUBLIC NOTIFICATION OF NONCOMPLIANCE**

A list of all industrial users which were in significant noncompliance with Pretreatment Standards or Requirements during any of the previous four quarters may be annually published by the Department in a local newspaper. Accordingly, the Permittee is apprised that noncompliance with this permit may result in publication of the noncompliance.

### **RECOMMENDATION FOR PERMIT ISSUANCE**

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics. The Department proposes that the permit be issued for five (5) years.

**REFERENCES FOR TEXT AND APPENDICES**

Washington State Department of Ecology.

Laws and Regulations( <http://www.ecy.wa.gov/laws-rules/index.html> )

Permit and Wastewater Related Information  
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)



## **APPENDIX A--PUBLIC INVOLVEMENT INFORMATION**

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

The Department published a Public Notice of Application and Draft (PNOA/D) on December 13, and December 20, 2004 in the Sunnyside Daily Sun News to inform the public that an application, draft permit and fact sheet were available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator  
Department of Ecology  
Central Regional Office  
15 West Yakima Avenue, Suite 200  
Yakima, WA 98902

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 509/457-7105, or by writing to the address listed above.

This permit was written by Richard Marcley.

## APPENDIX B--GLOSSARY

**Ammonia**—Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

**Average Monthly Discharge Limitation**—The average of the measured values obtained over a calendar month's time.

**Best Management Practices (BMPs)**--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

**BOD<sub>5</sub>**--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD<sub>5</sub> is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the Federal Clean Water Act.

**Bypass**—The intentional diversion of waste streams from any portion of the collection or treatment facility.

**Categorical Pretreatment Standards**—National pretreatment standards specifying quantities or concentrations of pollutants or pollutant properties which may be discharged to a IWWTF by existing or new industrial users in specific industrial subcategories.

**Compliance Inspection - Without Sampling**--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

**Compliance Inspection - With Sampling**--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

**Composite Sample**—A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be “time-composite”(collected at constant time intervals) or “flow-proportional” (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

**Construction Activity**—Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

**Continuous Monitoring** –Uninterrupted, unless otherwise noted in the permit.

**Engineering Report**—A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

**Grab Sample**—A single sample or measurement taken at a specific time or over as short period of time as is feasible.

**Industrial User**—A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

**Industrial Wastewater**—Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

**Interference**— A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the IWWTF, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the IWWTF's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge

regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

**Local Limits**—Specific prohibitions or limits on pollutants or pollutant parameters developed by a IWWTF.

**Maximum Daily Discharge Limitation**—The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.

**Method Detection Level (MDL)**--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

**Pass-through**— A discharge which exits the IWWTF into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the IWWTF's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

**pH**—The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

**Potential Significant Industrial User**--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the IWWTF (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

**Quantitation Level (QL)**-- A calculated value five times the MDL (method detection level).

**Significant Industrial User (SIU)**--

1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;

2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the IWWTF (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the IWWTF treatment plant; or is designated as such by the Control Authority\* on the basis that the industrial user has a reasonable potential for adversely affecting the IWWTF's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the IWWTF's operation or for violating any pretreatment standard or requirement, the Control Authority\* may at any time, on its own initiative or in response to a petition received from an industrial user or IWWTF, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

\*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated IWWTFs or to the IWWTF in the case of delegated IWWTFs.

**Slug Discharge**—Any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge to the IWWTF. This may include any pollutant released at a flow rate which may cause interference with the IWWTF.

**State Waters**—Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the State of Washington.

**Stormwater**—That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed percolation facility.

**Technology-based Effluent Limit**—A permit limit that is based on the ability of a treatment method to reduce the pollutant.

**Total Coliform Bacteria**—A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

**Total Dissolved Solids**—That portion of total solids in water or wastewater that passes through a specific filter.

**Total Suspended Solids (TSS)**--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills

and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

**Water Quality-based Effluent Limit**—A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

## APPENDIX C--RESPONSE TO COMMENTS

Comments from Yakima Chief Inc.:

### Fact Sheet Comments

- 1) p6, para 1: change “The consumption of water per day is estimated at approximately 12,000 gpd.” to “The discharge...”

### *Departmental Response:*

*The Department agrees that on p6, para 4: the “consumption of water per day” should have been written as “the discharge of water per day”. Once a Fact Sheet has gone to public notice it cannot be modified, therefore the Fact Sheet will remain as written.*

### Permit Comments

- 1) p5, S1B - I wonder if you could do something about the tone of the first sentence which reads, “Beginning on **the effective date** and lasting through **the expiration date of this permit**, the Permittee is authorized to discharge wastewater to infiltration ponds, at the permitted location subject to the following limitations:”

This implies that we have been out of compliance; my management perceives a judgmental tone in the wording, as “effective date” is in bold font. Discharge to the pond is **not** beginning upon the effective date of this permit; our **current permit** allows our current practice of discharging to the infiltration pond.

Therefore, it would be appreciated if you would please reword the referenced line to indicate that we are simply renewing our current permitted agreement to discharge to the pond.

### *Departmental Response:*

*Your current permit allows the discharge and the proposed permit will continue to permit the discharge beginning on the effective date of that permit. The bold font is a mechanism used for the ease of the reader only. At issuance, actual dates will replace the existing wording.*

- 2) p7, S2A1. table – please change pH sample type to “Composite” rather than “Grab”. Robert Farrell of the Port of Sunnyside has discussed this matter with James LaSpina of the Department of Ecology and they agreed that this methodology is the current sample type and is an agreeable sample method.

*Departmental Response:*

*Table on p7, S2A1 Grab is changed to read Composite.*

- 3) p8, S2C Flow Measurement – In a conversation with Rich Marcley on 11/18/04, I explained that we have installed flow meters on various equipment inlets to help understand our equipment water consumption. These meters are for information only and are only used to help make estimates of our effluents. The meters are simply dial type indication and are not intended to be a highly accurate method of determining effluent though they do indicate agreement between known inflows and all outflows.

As all required flow “Sample Type” indicate “calculation” in permit notations, I assumed that we were not subject to the calibration requirements within this permit. Rich confirmed that for me in conversation.

Would it be possible to define this in the permit so there aren’t future confusions with requirements?

*Departmental Response:*

The operative phrase in the standard language contained in S2C is underlined.

*“The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements are consistent with the accepted industry standard for that type of device.”*

It would also be helpful to identify what is required for the effluent stream to the Port and where the records should be maintained.

*Departmental Response:*

*Page 7, paragraph 4: of the Fact Sheet states “Flows to the IWWTF are monitored by the Port of Sunnyside at the Port maintained weir.” This implies that the Port and not the Permittee is responsible for the maintenance of the weir and any records associated with its maintenance.*